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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,412	12/07/2001	Russel Shirley	AMDA.499C1 (TT4002/03C1)	6042

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EXAMINER
RODRIGUEZ, PAUL L

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 05/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/010,412	Applicant(s) SHIRLEY ET AL.	
	Examiner Paul L Rodriguez	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 07 December 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-15 are presented for examination.

Specification

2. The disclosure is objected to because of the following minor informality: Examiner discovered that the only difference between the current application and the parent is that the paragraph starting with "According to yet another aspect of the present invention..." which is found col. 3 lines 7-28 of the parent patent is not used in this application. This is not considered a problem however, the examiner wanted to point this out to the applicant. Applicant should be aware this paragraph may be considered new matter if applicant attempts to add this paragraph back into the specification.

Appropriate correction is required only.

Claim Objections

3. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 in lines 4-5 recite, "...wherein the masks are selected from the group consisting of reticles, wafer processing masks and solder bump masks. Claim 7 recites "The method of claim 6, wherein the masks are selected from the group consisting of: reticles, wafer processing masks and solder bump masks." Claim 6 and 7 recite identical language and do not further limit the subject matter.

4. Claims 6, 8, 9 and 10 are objected to because of the following informalities:

Claim 6 lines 1-2 and claim 8 lines 1-2 recite "the computer arrangement", "a computer" was previously claimed but there was no claim of a computer arrangement, this could create an antecedent problem in the claim.

Claim 8 line 3 recites "the mask data set", "mask data" was previously claimed but not a mask data set, this could create an antecedent problem with the claim, examiner considers the "mask data" and the "mask data set" to be separate and distinct items.

Claim 9 line 2 recites "the carrier code", this was previously claimed as "the carrier identification code", this could create an antecedent problem with the claim.

Claim 10 line 2 recites "the pod", previous claiming of "in mask pods" and "pod identification codes" however there was no claiming of a pod, this could create an antecedent problem with the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 13 recites the limitation "the computer arrangement" in claim 13 line 3. There is insufficient antecedent basis for this limitation in the claim. Previously claimed as "computer means".

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,351,684. Although the conflicting claims are not identical, they are not patentably distinct from each other because (claim 1 of '684) the method for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, generating a mask data set for each mask that includes information on a mask identification code cross-referenced to a pod identification code, storing the mask data sets in a computer arrangement, updating the mask data sets in the computer arrangement to include a facility location identification code as each mask moves to a subsequent location during wafer processing are claimed as (claim 1) a computer-based

automated method for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, for each mask generating mask data that includes a mask identification code, using a computer to process the mask data, including cross-referencing respective mask identification codes to pod identification codes and updating the mask data to include a facility location identification code.

(Claim 10 of '684) a system for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, means for generating a mask data set for each mask that includes information on a mask identification code cross-referenced to a pod identification code, means for storing the mask data sets in a computer arrangement, means for updating the mask data sets in the computer arrangement to include a facility location identification code as each mask moves to a subsequent location during wafer processing are claimed as (claim 11) system for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, for each mask, means for generating mask data that includes a mask identification code, computer means for processing the mask data, including cross-referencing respective mask identification codes to pod identification codes and updating the mask data to include a facility location identification code.

(Claim 15 of '684 contains identical limitations as claim 1, also including) conducting a degradation analysis on each mask that includes a comparison of the mask data to a mask baseline specification so as to generate degradation data for each mask and using the computer arrangement to analyze and track the mask degradation data to determine the useful life of each mask are claimed as (claim 14) conducting a degradation analysis on each mask that includes a comparison of the mask data to a mask baseline specification so as to generate degradation data

for each mask and analyzing and tracking the mask degradation data to determine the useful life of each mask in the instant invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the computer arrangement as computer-based automation for tracking articles because computer based automation is very well known in the area of article handling and article tracking and because it is well known that computer arrangements provide a means to simplify complicated and complex systems or processes through the use of automation.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1-7, and 9-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Wiesler et al (US2001/0047222). The claimed invention reads on Wiesler et al as follows:

Wiesler et al discloses (claim 1) a computer-based automated method for tracking the movement of masks (reticle, paragraph 14 lines 1-2) used in a wafer processing facility (paragraphs 5, 15-17), the masks being moved in mask pods (reticle carriers, paragraphs 5, 6), the method comprising for each mask, generating mask data that includes a mask identification code (figures 3a, paragraph 19), using a computer (reference number 204) to process the mask data, including cross-referencing respective mask identification codes to pod identification codes (figure 3A, Reticle ID, Reticle Carrier ID, paragraph 19, claims 3, 4), updating the mask data to

include a facility location identification code (storage of reticle in stocker, figure 3B, Current Location), (claim 2) wherein said updating occurs as each mask moves to a subsequent location during wafer processing (figure 3B, including current and last locations) and said updating includes adding a tool identification code to the mask data set when the mask arrives to a tool location (processing stations, paragraph 15, figure 3B, current and last locations), (claim 3) after said updating, further including creating a historical database for the mask data corresponding to each mask and tracking the movement of each mask when the mask arrives to a new location (paragraph 5, figure 3B, current and last locations, paragraph 19), (claim 4) after the updating step, further including the step of providing a material control system that sends a selected mask to a new location (paragraph 17), thereby triggering all update of the mask data set for the selected mask when the mask arrives to the new location (paragraphs 5, 17), (claim 5) further including storing mask data (paragraphs 5, 19, figure 3), (claim 6) wherein storing mask data includes using the computer arrangement to track the condition of each mask (paragraphs 5, 17, 20), the mask condition including particle contamination, mask degradation, number of exposures, number of times mask is handled and mask structural defects (figure 3E, reference number 310), (claim 6 and 7) wherein the masks are selected from the group consisting of reticles, wafer processing masks and solder bump masks (paragraph 14), (claim 9) further including matching the mask to a carrier (figure 3A, reticle ID, reticle carrier ID), the carrier having a carrier identification code (reticle carrier ID, figure 3B) and storing the carrier code data as part of the mask data (figure 3B, paragraph 19), (claim 10) further including tracking the mask movement from a material stocker, through a stepper and through an inspection tool while in the pod (paragraphs 15, 16), (claim 11) a system (figure 2, paragraphs 17, 18) for tracking the

movement of masks used in a wafer processing facility (paragraphs 5, 6), the masks being moved in mask pods (reticle carriers), the system comprising for each mask, means for generating mask data that includes a mask identification code (figure 3A, paragraph 19), and computer means for processing the mask data (reference numbers 202, 204), including cross-referencing respective mask identification codes to pod identification codes (figure 3A, reticle ID, reticle carrier ID, paragraph 19, claims 3, 4) and updating the mask data to include a facility location identification code (storage of reticle in stocker, figure 3B, current location), (claim 12) further including a material handling system adapted to move the masks and mask pods to multiple locations in the wafer processing facility (paragraph 16), wherein the mask data set further includes a tool identification code, generated when the mask arrives to a new tool location, that is stored in the computer arrangement (figure 3B, current and last location, processing station, paragraph 15), (claim 14) a computer-based automated method for tracking the movement of masks (reticles) used in a wafer processing facility (paragraphs 5, 6), the masks being moved in mask pods (reticle carriers, paragraphs 5, 6), the method comprising for each mask, generating mask data that includes a mask identification code (figure 3A, paragraph 19), using a computer (reference number 204) to process the mask data, including cross-referencing respective mask identification codes to pod identification codes (figure 3A, reticle ID, reticle carrier ID, paragraph 19, claims 3, 4) and updating the mask data to include a facility location identification code (storage of reticle in stocker, figure 3B, current location), conducting a degradation analysis on each mask that includes a comparison of the mask data to a mask baseline specification so as to generate degradation data for each mask (figure 3B, inspection, figure 3E, inspection results, paragraph

20), and analyzing and tracking the mask degradation data to determine the useful life of each mask (paragraph 20).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiesler et al (US 2001/0047222 A1) in view of Terao (U.S. Pat 5,191,535).

Wiesler et al teaches most all of the instant invention as applied to claims 1-7 and 9-14 above. Wiesler et al fails to teach wherein said storing mask data includes using the computer arrangement to match a reticle serial number and a wafer lot to an event on a processing line.

Terao teaches using the computer arrangement to match a reticle serial number and a wafer lot to an event on a processing line (col. 1 lines 32-55).

Wiesler et al and Terao are analogous art because they are both directed to a reticle or mask handling control system.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the matching of reticles to wafer lots of Terao in the reticle management system of Wiesler et al because Terao teaches that through the use of priorities, the matching of wafer lots and masks minimizes wasted time in processing wafers, therefore increasing productivity and reducing processing time (col. 1 lines 10-20). (col 3 ll 5-12

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hashimoto et al (U.S. Pat 6,334,209) – teaches a method of inspecting semiconductor exposure masks and recording information about the mask.

Wehrung et al (U.S. Pat 6,240,335) – teaches a material transport system for controlling movement of wafers and reticles.

Conboy et al (U.S. Pat 6,157,866) – teaches a computer automated handling system for a wafer manufacturing facility.

Funk (U.S. Pat 6,136,614) – teaches matching a wafer lot with a reticle.

Fukuda et al (U.S. Pat 6,112,130) – teaches a semiconductor manufacturing method that takes into consideration the condition of the mask or reticle.

Ryan et al (U.S. Pat 5,972,727) – provides a reticle sorter for managing numerous reticles used in wafer processing, teaches improved throughput of wafers, teaches a cassette having slots for the movement of reticles and finally, teaches an inspection system for determining the characteristic of each reticle.

Kobayashi et al (U.S. Pat 5,231,585) – provides a computer integrated manufacturing system for wafer manufacturing which tracks wafers and establishes data files for each.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul L Rodriguez whose telephone number is (703) 305-7399. The examiner can normally be reached on 6:30 - 4:00 M-Th and alternate F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (703) 308-0538. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Paul L Rodriguez
Examiner
Art Unit 2121

PLR
May 28, 2002

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100